

what is claimed is:

1. A piezoelectric ceramic composition comprising  $\text{Pb}(\text{Ni}_{1/3}\text{Nb}_{2/3})\text{O}_3$ ,  $\text{PbTiO}_3$ , and  $\text{PbZrO}_3$ , wherein:  
a composition of  $\text{Pb}(\text{Ni}_{1/3}\text{Nb}_{2/3})\text{O}_3$ ,  $\text{PbTiO}_3$ , and  $\text{PbZrO}_3$  exists in an area in a triangular coordinate system defined by apexes of  $\text{Pb}(\text{Ni}_{1/3}\text{Nb}_{2/3})\text{O}_3$ ,  $\text{PbTiO}_3$ , and  $\text{PbZrO}_3$ , the area being surrounded by lines for connecting a point A ( $X = 40$ ,  $Y = 37$ ,  $Z = 23$ ), a point B ( $X = 36$ ,  $Y = 37$ ,  $Z = 27$ ), a point C ( $X = 33$ ,  $Y = 40$ ,  $Z = 27$ ), and a point D ( $X = 37$ ,  $Y = 40$ ,  $Z = 23$ ), when  $\text{Pb}(\text{Ni}_{1/3}\text{Nb}_{2/3})\text{O}_3$  amounts to X molar %,  $\text{PbTiO}_3$  amounts to Y molar %, and  $\text{PbZrO}_3$  amounts to Z molar % ( $X + Y + Z = 100$ ).
2. The piezoelectric ceramic composition according to claim 1, wherein the piezoelectric ceramic composition consists of  $\text{Pb}(\text{Ni}_{1/3}\text{Nb}_{2/3})\text{O}_3$ ,  $\text{PbTiO}_3$ , and  $\text{PbZrO}_3$ .
3. The piezoelectric ceramic composition according to claim 1, wherein the composition of  $\text{Pb}(\text{Ni}_{1/3}\text{Nb}_{2/3})\text{O}_3$ ,  $\text{PbTiO}_3$ , and  $\text{PbZrO}_3$  exists in an area surrounded by lines for connecting a point E ( $X = 38$ ,  $Y = 38$ ,  $Z = 24$ ), a point F ( $X = 36$ ,  $Y = 38$ ,  $Z = 26$ ), a point G ( $X = 35$ ,  $Y = 39$ ,  $Z = 26$ ), and a point H ( $X = 37$ ,  $Y = 39$ ,  $Z = 24$ ).
4. The piezoelectric ceramic composition according

to claim 1, wherein a piezoelectric displacement  $d_{33}$ , which is obtained when a DC electric field of 1 kV/mm is applied in the same direction as that of a polarization axis of the piezoelectric ceramic composition, is not less than 750 pm/V.

5. The piezoelectric ceramic composition according to claim 1, wherein a relative dielectric constant at 1 kHz is within a range of 3550 to 1700.

6. The piezoelectric ceramic composition according to claim 1, further containing La in a ratio of 0.3 to 0.5 % by weight as calculated by conversion into an oxide represented by  $\text{La}_2\text{O}_3$ .

7. A piezoelectric actuator which is formed of the piezoelectric ceramic composition as defined in claim 1.

8. An ink-jet head comprising the piezoelectric actuator as defined in claim 5 and a cavity plate.